USAT MOD-2

Contract #: 500-97-012 **Project #:** 13
Contractor: Edison Technology Solutions/Southern California Edison
Project Amount: $1,000,000
Contractor Project Manager: Bob Yinger (626) 815-0507
Commission Contract Manager: Linda Davis (916) 654-3848
Status: Completed

Project Description:
The purpose of this project was to promote development of the USAT satellite communications system to deliver high-reliability communications for utility supervisory control and data acquisition (SCADA) systems under all types of weather conditions. SCADA systems allow a utility to monitor and control its transmission and distribution system to insure high reliability. Traditionally, communications was accomplished by leased or private telephone lines, microwave, fiber optic cable or radio. The use of satellite communications needs to be very cost effective in remote areas and capable of collecting high speed SCADA data from any location in California no matter how remote. This data would not be available if conventional communications technologies were used.

This SCADA data is valuable in insuring that the highest reliability is maintained for the California transmission and distribution systems by enabling real-time monitoring of system loading and quick execution of control commands during normal and emergency conditions. Because of the system's high reliability and "communications anywhere" capability, it is invaluable during major fires, storms and earthquake emergencies. Communications during these emergencies is valuable in locating problems, assessing damage and returning equipment to service quickly. The ULTRA-NET™ remote terminals are easily installed and can be in service within a few hours to help reduce restoration time after a catastrophic event.

This project supports the PIER Program objectives of:

- Improving the reliability/quality of California's electricity by providing accurate electric grid monitoring information on power supply disruptions.
- Improving the energy cost/value of California's electricity by reducing maintenance costs and restoration time.
- Improving the environmental and public health costs/risks of California's electricity by eliminating the need for service vehicles to visit remote sites on a regular basis. [This will result in a reduction of over 3 million vehicle miles (250 to 500k miles per year) resulting in fuel conservation and a corresponding reduction in environmental pollution].
- Improving the safety of California's electricity by allowing communications to be restored quickly when the infrastructure for other systems has been damaged or during catastrophic events.

Proposed Outcomes:

1. Deliver high-reliability data between SCADA systems of electrical transmission and distribution systems under all types of weather conditions using satellite communications that are cost effective in remote areas.
2. Develop a satellite communications system capable of collecting high speed SCADA data from any location in California no matter how remote to make data available beyond that of conventional communications technologies and enabling real-time monitoring.

Actual Outcomes:

1. The system operated successfully, but more field operation is required before it can be considered a commercial product.
2. To increase the commercial potential of the system, the cost of the remote terminals needs to be reduced since many remotes and only one hub is required in a complete system.
3. Restoration time for communication to remote areas can be greatly improved since conventional restoration can take days, while the restoration of communications with USAT is accomplishable within hours.

Project Status:

The project has been completed.